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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Naoki Matsuoka

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KATTEN MUCHIN ZAVIS ROSENMAN
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER

TON, ANTHONY T

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary

Application No.

09/817,073

Applicant(s)

MATSUOKA ET AL.

Examiner

Anthony T Ton

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7, 8, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 3, 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


PHIRIN SAM
PRIMARY EXAMINER

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 2, 7, 8, 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mizukoshi et al.* (US Patent No. 5,825,767) in view of *Calvignac et al.* (US Patent No. 6,714,562) hereinafter referred to as *Mizukoshi* and *Calvignac* respectively.

a) **In Regarding to Claim 1:** *Mizukoshi* disclosed a buffer unit for processing fixed-length packets that have been fragmented from variable-length packets, said processing being performed in units of fixed-length packets, comprising:

a fixed-length packet storing part configured to store the fixed-length packets for each of a plurality of output paths (*see Figs.1 and 2: Shared buffer 11*);

a multicasting processing part configured to store multicasting packets having a plurality of destinations, and to transfer the multicasting packets to said fixed-length packet storing part depending on the plurality of destinations (*see Fig.5: 471-47N, 15 and 11*); and

a control part configured to monitor a storage state of said fixed-length packet storing part (*see Figs.2: blocks 17, 25 and 22*).

Mizukoshi fails to explicitly disclose processing fixed-length packets that have been fragmented from variable-length packets, and a control part that carries out a control so that the

multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet.

Calvignac explicitly disclosed such processing fixed-length packets that have been fragmented from variable-length packets (*see Fig.1: frame process 106, col.1 lines 13-17, and col.3 lines 57-67*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such processing fixed-length packets that have been fragmented from variable-length packets, as taught by *Calvignac* with *Milzukoshi*, so that variable-length frames of unicasting packets or multicasting packets such as IP packets can be fragmented into ATM packets in a purpose of sending successive frames to the same destination or different destinations. The motivation for doing so would have been to save bandwidth in communication networks (*see col.1 line 66 – col.2 line 2*). Therefore, it would have been obvious to combine *Calvignac* with *Milzukoshi* in the invention as specified in the claim.

Calvignac also explicitly disclosed such a control part that carries out a control so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet (*see Figs.1 and 5: control block 107; col.4 lines 10-40; and col.5 line 44-col.6 line 45: multicast format*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a control part that carries out a control so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet, as taught by *Calvignac* with *Milzukoshi*, so that variable-length multicasting frames can be properly controlled and transferred in different variable frames to a

plurality of destinations. The motivation for doing so would have been to provide a proper control to a buffer unit of a switch and save transmission bandwidth to a communication network (*see col.1 line 66 – col.2 line 2*). Therefore, it would have been obvious to combine *Calvignac* with *Mizukoshi* in the invention as specified in the claim.

b) In Regarding to Claim 7: the claimed subject matters of this claim are the same as that of claim 1, except for temporary storing part configured to store the fixed-length packets and to output a plurality of fixed-length packets forming a single variable-length packet after the plurality of fixed-length packets are received.

However, *Mizukoshi* also disclosed such temporary storing part (*see Fig.2: 12*).

Therefore, the rejection to claim 1 would also apply to reject this claim.

c) In Regarding to Claims 2 and 8: *Mizukoshi* disclosed all aspects of this claim as set forth in claims 1 and 7, respectively; and

Mizukoshi further disclosed the buffer unit, further comprising:

a multicasting packet storing part configured to store the multicasting packets having the plurality of destinations (*see Fig.2: 16 and 11*), and to transfer the plurality of multicasting packets to said multicasting processing part after a plurality of multicasting packets forming a single packet are received (*see Fig.5 : 17, 471-47N, 151-15N, and 11*).

Mizukoshi failed to explicitly disclose a plurality of multicasting packets forming a single variable-length packet.

However, this claimed subject matter was described in the claims 1 and 7.

Therefore, the rejection to claims 1 and 7 would also apply to reject these claims for the same reasons.

d) **In Regarding to Claim 11:** the claimed subject matters of this claim are the same as that of claim 7, except for the claimed subject matter of outputs of said first storing part and said multicasting processing part being switched in units of a variable-length packet which is formed by a plurality of fixed packets.

However, this claimed subject matter is similar to that in the last part that was disclosed in the claim 1.

Therefore, the rejection to claims 1 and 7 would also apply to reject this claim for the same reasons.

e) **In Regarding to Claim 12:** *Mizukoshi* disclosed a switching apparatus for processing fixed-length packets that have been fragmented from variable-length packets, said processing being performed in units of fixed-length packets, comprising:

an input buffer section receiving multicasting packets having a plurality of destinations or unicasting packets having a single destination (*see Fig.2: 12, 21, 25, 22, 23, 17 and 11*);

a switching section switching the multicasting packets or the unicasting packets received from said input buffer section depending on the destination of each packet (*see Fig.1*); and

an output buffer section receiving fixed-length packets from said switching section depending on output paths, and defragmenting the fixed-length packets into packets, said input buffer section outputting a plurality of fixed-length packets in units of a packet which is formed by a plurality of fixed-length packets (*see Figs.2: 15, 31, 11 and 13*).

Mizukoshi fails to explicitly disclose processing fixed-length packets that have been fragmented from variable-length packets, and a variable-length packet that is formed by a plurality of fixed-length packets.

Calvignac explicitly disclosed such processing fixed-length packets that have been fragmented from variable-length packets, and such a variable-length packet that is formed by a plurality of fixed-length packets (*see abstract, Fig.1, col.1 lines 13-17, and col.7 lines 55-59*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such processing fixed-length packets that have been fragmented from variable-length packets, and such a variable-length packet that is formed by a plurality of fixed-length packets, as taught by *Calvignac* with *Mizukoshi*, so that variable-length frames of unicasting packets or multicasting packets can be fragmented into fixed-length packets in a purpose of sending successive frames to the same destination or different destinations. The motivation for doing so would have been to save bandwidth in communication networks (*see col.1 line 66 – col.2 line 2*). Therefore, it would have been obvious to combine *Calvignac* with *Mizukoshi* in the invention as specified in the claim.

3. **Claims 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mizukoshi et al.* (US Patent No. 5,825,767) in view of *Calvignac et al.* (US Patent No. 6,714,562) as applied to claims 1, 2, 7, 8, 11 and 12 above, and further in view of *Harriman et al.* (US Patent No. 5,898,687) hereinafter referred to as *Harriman* (Note: this Prior Art was provided by the Applicant via IDS #5).

a) **In Regarding to Claim 4:** the claimed subject matters of claim 4, which differ from that of claim 1, are following:

a fixed-length packet storing part including first and second packet storing sections; and a control section carrying out a control so that reading from said first and second packet storing sections.

However, *Mizukoshi* inherently disclosed such a control section carrying out a control so that reading from said first and second packet storing sections because *Mizukoshi* disclosed single-cast packets and multi-cast packets that are stored in the shared buffer 11 (*see col.4 line 55 – col.5 line 6*), and the addresses of such packets are read into the address buffers 15₁ to 15_N of the address buffer 15 by the multi-cast controller 22 as shown in Fig.2.

Mizukoshi fails to explicitly disclose a fixed-length packet storing part including first and second packet storing sections.

Harriman explicitly disclosed such a fixed-length packet storing means including first and second packet storing sections (*see Fig.3: unicast storing section and multicast storing section*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a fixed-length packet storing means including first and second packet storing sections, as taught by *Harriman* with *Mizukoshi*, in order that single-cast packets and multi-cast packets can be stored in different storages. The motivation for doing so would have been to provide a novel fair-sharing arbitration policy in communication networks (*see col.3 lines 39-41*). Therefore, it would have been obvious to combine *Harriman* with *Mizukoshi* in the invention as specified in the claim.

b) In Regarding to Claim 5: *Mizukoshi* disclosed all aspects of this claim as set forth in claim 4; and

Mizukoshi further disclosed the buffer unit, further comprising:

multicasting packet storing means for storing the multicasting packets having the plurality of destinations (*see Fig.2: 16 and 11*), and transferring the plurality of multicasting packets to said multicasting processing means after a plurality of multicasting packets forming a single packet are received (*see Fig.5 : 17, 471-47N, 151-15N, and 11*).

Mizukoshi fails to explicitly disclose a plurality of multicasting packets forming a single variable-length packet. However, this claimed subject matter was described in the claim 4. Therefore, the rejection to claim 4 would also apply to reject this claim for the same reasons.

4. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Harriman et al.* (US Patent No. 5,898,687) in view of *Calvignac et al.* (US Patent No. 6,714,562).

Harriman disclosed a switching apparatus for processing fixed-length packets that have been fragmented from variable-length packets, said processing being performed in units of fixed-length packets (*see Fig.1*), comprising:

an input buffer section receiving multicasting packets having a plurality of destinations or unicasting packets having a single destination (*see Fig.1: 120 and 112; Fig.2: 210*);

a switching section switching the multicasting packets or the unicasting packets received from said input buffer section depending on the destination of each packet (*see Fig.2: 250*); and

an output buffer section receiving fixed-length packets from said switching section depending on output paths, and defragmenting the fixed-length packets into packets, said input buffer section outputting a plurality of fixed-length packets in units of a packet which is formed by a plurality of fixed-length packets (*see Fig.1: 130, 122, 112 and 116; Figs.2: 230*).

Harriman fails to explicitly disclose fragmenting variable-length packets into fixed-length packets, and a variable-length packet that is formed by a plurality of fixed-length packets.

Calvignac explicitly disclosed such fragmenting variable-length packets into fixed-length packets, and such a variable-length packet that is formed by a plurality of fixed-length packets (see abstract, Fig. 1, col. 1 lines 13-17, and col. 7 lines 55-59).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such fragmenting variable-length packets into fixed-length packets, and such a variable-length packet that is formed by a plurality of fixed-length packets, as taught by *Calvignac* with *Harriman*, so that variable-length frames of unicasting packets or multicasting packets can be fragmented into fixed-length packets in a purpose of sending successive frames to the same destination or different destinations. The motivation for doing so would have been to save bandwidth in communication networks (see col. 1 line 66 – col. 2 line 2). Therefore, it would have been obvious to combine *Calvignac* with *Harriman* in the invention as specified in the claim.

Allowable Subject Matter

5. **Claims 3, 6 and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Remarks

6. Applicant's arguments filed on 11/29/2004 have been fully considered but they are not persuasive. Claims 10 and 13 have been canceled, and the amended claims 1-9, 11 and 12 have

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been respectfully reconsidered. However, all of the amended claims are still rejected as the same old ground of the rejection as described above.

Rejection Under 35 U.S.C. § 112 2nd Paragraph

With the preambles of the independent claims 1, 4, 7, 11 and 12 have been amended, Examiner respectfully withdraw the rejection.

Rejection Under 35 U.S.C. § 103

In Regarding to independent claims 1, 4, 7, 11 and 12:

Examiner respectfully agrees with the Applicants that *Mizukoshi* fails to disclose processing fixed-length packets that have been fragmented from variable-length packets, and a control part that carries out a control so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet. However, *Calvignac* explicitly disclosed such processing fixed-length packets that have been fragmented from variable-length packets (*see Fig.1, col.1 lines 13-17, and col3 lines 57-67*), and *Calvignac* also explicitly disclosed such a control part that carries out a control so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet (*see Figs.1 and 5: control block 107; col.4 lines 10-40; and col.5 line 44-col.6 line 45: multicast format*).

Examiner respectfully disagrees with the Applicants that *Calvignac* fails to disclose Applicants' claimed control part for monitoring a monitoring a storage of a fixed-length packet storing part and for controlling the transfer of multicasting packets to the fixed length packet storing part so that "the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet" because

Calvignac explicitly disclosed such a control part (see Figs.1 and 5: control block 107; col.4 lines 10-40; and col.5 line 44-col.6 line 60: multicast format, the segmenting process creates and updates information in the control blocks 107 via the connection bus 506. The information the segmenting process maintains is the current frame status).

Therefore, it is obvious to a person of ordinary skill in the art to combine such processing fixed-length packets that have been fragmented from variable-length packets, and such a control part that carries out a control so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet, as taught by *Calvignac* with *Mizukoshi* as set forth above in this Office Action.

Examiner respectfully agrees with the Applicants that *Harriman* fails to disclose or suggest Applicants' claimed buffer unit for controlling the defragmenting of fixed-length packets so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet. However, *Calvignac* explicitly disclosed such a buffer unit for controlling so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet (see Figs.1 and 5: control block 107; col.4 lines 10-40; and col.5 line 44-col.6 line 45: multicast format).

Therefore, it is obvious to a person of ordinary skill in the art to combine such processing fixed-length packets that have been fragmented from variable-length packets, and such a control part that carries out a control so that the multicasting packets are transferred between a variable-length packet formed by a plurality of fixed-length packets and a next variable-length packet, as taught by *Calvignac* with *Harriman* as set forth above in this Office Action.

In summary, Examiner respectfully reconsidered the independent claims 1, 4, 7, 11 and 12; however, they are made obvious by the combinations of the cited references, and are therefore rejected. The claims 2, 5 and 8, which are depending from the rejected claims 1, 4 and 7, have also been rejected as described above in this Office Action.

For the reasons above, the claims 1, 2, 4, 5, 7, 8, 11 and 12 are unpatentable and being still rejected as the same old ground of the rejection.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The examiner can normally be reached on M-F: 9:00 am - 5:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chau Nguyen** can be reached on **571-272-3126**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBT) at 866-217-9197 (toll-free).

Respectfully submitted,

by: *qth*
Anthony T. Ton
Patent Examiner
March 15, 2005



PHIRIN SAM
PRIMARY EXAMINER